

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **29 DECEMBER 2004 (29.12.2004)**

Applicant's or agent's file reference
PIA40319M2N

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/000741

International filing date (day/month/year)

31 MARCH 2004 (31.03.2004)

Priority date(day/month/year)

International Patent Classification (IPC) or both national classification and IPC

IPC7 H01L 21/306

Applicant

M2N INC. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000741

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000741

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-12 | YES |
| | Claims | NONE | NO |
| Inventive step (IS) | Claims | NONE | YES |
| | Claims | 1-12 | NO |
| Industrial applicability (IA) | Claims | 1-12 | YES |
| | Claims | NONE | NO |

2. Citations and explanations :

1. Reference is made to the following documents:

D1: JP 08-313541(OLYMPUS OPTICAL CO LTD)

Claims 1 to 11 describe a method for fabricating a probe for a scanning probe microscope, comprising (a) forming a first mask to define a pattern for a tip and a second mask to define a pattern for a cantilever on an SOI wafer having a handle layer, an insulation layer and a device layer, (b) etching the device layer by using the first and second masks, (c) forming a sidewall passivation layer on the device layer, (d) etching the device layer by using the first mask to form the tip and (e) etching the handle layer by using a third mask to define a pattern for a mounting block. And claim 12 describe a probe for a scanning probe microscope using the method.

Document D1 discloses a method for manufacturing a cantilever for scanning probe microscope, comprising (a) preparing a bonded substrate(108) obtained by sticking a second substrate(106) to an oxide film formed on one surface of a first substrate(102), (b) shaping the substrate(106) in the shape of a lever section, (c) forming an oxide film(112) on the side end face of the lever section, (d) forming a probe section at part of the lever section after etching the substrate(106) to a prescribed thickness and (e) forming a supporting section in the substrate(102) after forming a oxide film on the surface of the substrate(106).

2. Novelty:

D1, which is considered to represent the most relevant state of the art, discloses a method for manufacturing a cantilever for scanning probe microscope from which the subject-matter of claim 1 differs in that the method includes a step of etching the device layer by using the first mask to form the tip. Thus, the subject-matter of claim 1 is novel under PCT Article 33(2). As a consequence, the subject-matter of the dependent claims 2-11 is novel. And the subject-matter of claim 12 is also novel.

3. Inventive step:

The subject-matter of claims 1-12, concerning a method for fabricating a probe for a scanning probe microscope and a probe for a scanning probe microscope, is not regarded as involving step, since said subject-matter is derivable from the D1.